

USSR

VINNIKOV, Ya. A., et al., Zhurnal Evolyutsionnoy Biokhimii i Fiziologii, Vol 8, No 3, May/Jun 72, pp 343-350

the flight, as it did in control embryos, and no differences were detected in development of the presumptive otocysts and the eighth ganglion. Morphology is described in detail, the main feature being the beginning of differentiation of receptor and support cells in the presumptive otocysts and of bipolar neuroblasts in the eighth ganglion. Thus weightlessness has no effect on development in general and on differentiation of the future vestibular apparatus in frog embryos.

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USSR

UDC 621.382:535.376

GUREVICH, I.M., NOVIKOVA, G.M., FYATNITSKAYA, G.A., IL'INSKIY, A.A.,  
LETICHEVSKIY, YE.A.

"Investigation Of Gallium-Phosphide Light-Emitting Diodes And Development Of  
Laboratory Generator Of Short Light Pulses"

V sb. Impul's. fotometriya (Pulse Photometry--Collection Of Works), Issue 2,  
Leningrad, "Mashinostroyeniye," 1972, pp 144-147 (from RZh:Elektronika i yeye  
primeneniye, No 9, Sept 1972, Abstract No 9B311)

Translation: The paper investigates GaP light-emitting diodes in a pulse regime  
( $\tau = 100$  nanosec) with a pumping current of 1.2 A. The luminous efficiency of  
the diffusion diodes amounts to  $5 \times 10^{-3}$  lm/sec/Joule and the epitaxial  $0.35 \times$   
 $10^{-3}$  lm/sec/Joule. A pulse generator (IGS-1) was developed for the supply of  
light-emitting diodes with a pulse duration of 10 nanosec, a front of 5 nanosec,  
and a maximum voltage of 35 V. 3 ill. 6 ref. Yu.M.

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USSR

PYATNITSKAYA, I. N., (Ed.)

Alkogolizm i Nealkogol'nyye Markomani (Alcoholism and Nonalcoholic Drug Addiction), Leningrad, 1971, p 198

Translation:

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PYATNITSKAYA, I. N., *Alkogolizm Nealkogol'nyye Narkomanii*, Leningrad, 1971, p 198

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PIATNITSKAYA, I. N., Alkogolizm Nealkogol'nyye Narkomani, Leningrad, 1971,  
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PUBLICATIONS

USSR

UDC 615.31:547.262]015.6

PORTNOV, A. A., and PYATNITSKAYA, I. N.

Klinika Alkogolizma (Clinical Aspects of Alcoholism), Leningrad, "Meditsina," 1971, 390 pp

Translation: Annotation: There is no need to say too much about the importance of studying chronic alcoholism as a special progressive disease characterized in most cases by an unfavorable prognosis. It is true that a vast mass of literature created by the efforts of Soviet and foreign researchers is dedicated to the problem of alcoholism. Nevertheless, many aspects of this problem are not yet fully elucidated. In this respect one may point first of all to those areas in the study of alcoholism in which the problems of its etiology, pathogenesis and therapy are being considered and also early diagnosis and the curtailing of public drinking.

In Soviet literature of the postwar period there are no monographs summarizing experience of systematic scientific study of the clinical aspects of alcoholism. In the available issues of the series "Biblioteka Prakticheskogo Vracha" [Library of the Practicing Physicians] clinical problems are only partially considered. These problems are treated more fully in the book by I. V. Strel'chuk published during the past year and dedicated to both the clinical

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USSR

PORTNOV, A. A., and PYATNITSKAYA, I. N., Klinika Alkogolizma (Clinical Aspects of Alcoholism), Leningrad, "Meditsina," 1971, 390 pp

but also to the pharmacodynamic and social aspects of the problem of alcoholism.

Data on the clinical aspects and treatment of alcoholism obtained by the authors in the course of many years of clinical investigations are collated in this monograph. The syndrome variants of this type of addiction are fully presented; scientific and practical problems of early diagnosis and prophylaxis of alcoholism are examined. The monograph contains also a description of acute and chronic alcoholic psychoses, presented in the light of modern psychiatry.

The monograph is a valuable survey containing new data on the problem of alcoholism. Its entire content conveys a dynamic research principle, which imparts the necessary orderly arrangement, and adequate authenticity to the main conclusions.

The brilliant and detailed descriptions of the clinical observations in the text attract attention.

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PORTNOV, A. A., and PYATNITSKAYA, I. N., Klinika Alkogolizma (Clinical Aspects of Alcoholism), Leningrad, "Meditsina," 1971, 390 pp

The description of the methods of prophylaxis and treatment of alcoholism is at the level of modern requirements and is complete.

The authors dwell for the first time on a number of new and problems never elucidated before: polynarcosis, alcoholism among women, criteria of early recognition, and clinical aspects of relapses -- all of considerable importance to the practicing physician. The entire work represents an original conception of one of the urgent problems of psychiatry.

The book is intended for physician-psychiatrists, neuropathologists, narcotics specialist, workers at scientific-research psychoneurological establishments, and teachers at schools of higher medical education.

The book will be useful not only to physician-psychiatrists, but also to representatives of other specialties -- and not only medical: socialists, psychologists, teachers, and jurists.

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USSR

PORTNOV, A. A., and PYATNITSKAYA, I. N., Klinika Alkogolizma (Clinical Aspects of Alcoholism), Leningrad, "Meditsina," 1971, 390 pp

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PORTNOV, A. A., and PYATNITSKAYA, I. N., Klinika Alkogolizma (Clinical Aspects of Alcoholism), Leningrad, "Meditsina," 1971, 390 pp

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PORTNOV, A. A., and PYATNITSKAYA, I. N., Klinika Alkogolizma (Clinical Aspects of Alcoholism), Leningrad, "Meditsina," 1971, 390 pp

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USSR

PORTNOV, A. A., and PYATNITSKAYA, I. N., Klinika Alkogolizma (Clinical Aspects of Alcoholism), Leningrad, "Meditsina," 1971, 390 pp

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1/2 - 008 UNCLASSIFIED PROCESSING DATE--18SEP70  
TITLE--RAISING BIOLOGICAL VALUE OF RATIONS WHICH INCLUDE BREAD WITH  
VARIOUS FOOD ADJUNCTS -U-  
AUTHOR--(03)-POKROVSKIY, A.A., NEMENOVA, YU.M., PYATNITSKAYA, I.N.  
COUNTRY OF INFO--USSR  
SOURCE--VOPROSY PITANIYA, 1970, NR 2, PP 33-38  
DATE PUBLISHED-----70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--DIET, CEREAL CROP, NITROGEN, PROTEIN, CREATININE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1985/1495 STEP NO--UR/0244/70/000/002/0033/0038  
CIRC ACCESSION NO--AP0101579  
UNCLASSIFIED

2/2 008

CIRC ACCESSION NO--AP0101579

UNCLASSIFIED

PROCESSING DATE--18SEP70

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. NUTRITIONAL UTILITY OF BREAD WITH VARIOUS FOOD ADJUNCTS (5PERCENT OF FISH MEAL, 20PERCENT SOYA AND 0.5PERCENT L-LYSIN HYDROCHLORIDE BY WEIGHT OF WHEAT FLOUR) WAS STUDIED. INVESTIGATIONS WERE CONDUCTED ON FIVE MALE VOLUNTEERS OF MIDDLE AGE. SUBJECT TO CHANGES IN THE RATION WAS ONLY THE QUALITATIVE COMPOSITION OF BREAD, WHICH ACCOUNTED FOR 30PERCENT OF THE TOTAL CALORIFIC VALUE OF THE RATION. THE DYNAMICS OF THE NITROGEN BALANCE, NET PROTEIN UTILIZATION, APPARENT PROTEIN DIGESTIBILITY, ALONG WITH THE URINARY CREATININE AND URINOPEPSINOGEN CONTENT WAS STUDIED. THE INVESTIGATIONS DEMONSTRATED THAT THE NUTRITIONAL USE OF BREAD WITH THE SAID FOOD ADJUNCTS CONTRIBUTED TO A BETTER UTILIZATION OF THE PROTEINS IN THE RATION. IN SPITE OF A CERTAIN STIMULATION OF ANABOLIC PROCESSES IN THE ORGANISM THE ALIMENTARY USE OF LYSIN ENRICHED BREAD NEEDS FURTHER STUDIES. THE REMAINING BREAD VARIETIES MAY BE RECOMMENDED FOR ALIMENTATION OF THE POPULATION.

UNCLASSIFIED

PYATNITSKIY, A. P.

## TECHNICAL TRANSLATION

FTIC-47-23-72

ENGLISH TITLE: Thermoelectric Energy Converters

RUSSIAN TITLE: Термoelectricные Преобразователи Энергии

AUTHOR:

B. V. Tselishev, A. P. Pyatnitskiy, D. I. Sergeyev

SOURCE:

Armedat, Moscow

Translated for FSTC by AGSI

### NOTICE

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USSR

UDO 621.355.163(088.8)

PYATNITSKIY, I. I.

"Device for Supplying a Load"

USSR Author's Certificate No 269263, filed 31 Oct 67, published 14 Aug 70  
(from RZh-Elektrotehnika i Energetika, No 2, Feb 71, Abstract No 2 Yell0 P)

Translation: The device for supplying a load contains a parallel-included DC source, for example, a fuel battery, and a buffer battery separated into several series sections distinguished by the fact that in order to increase the voltage each of the buffer battery sections is connected to the fuel battery via two automatically controlled breakers. The device is capable of increasing the basic source voltage  $U_0$  by N times and decreasing its current  $I_0$  by N times (where N is the number of buffer battery sections); that is, the device operates as a DC transformer. There is 1 illustration.

1/1



AA 0043451

P  
UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent,

242996 PULSE SUPPLY TO LOAD FROM SEVERAL CHEMICAL  
FEED SOURCES where to ensure continuous  
supply and to increase average power and total  
discharge time, the chemical sources are charged  
by pulse current during the intervals between dis-  
charging pulses.

The chosen charge current intensity is from  
10 milliamps/cm<sup>2</sup> to 20 amp/cm<sup>2</sup>, duration 1 micro-  
second to 10 seconds, pulse frequency 1 KHZ to  
0,01 HZ.

30.11.67 as 1201476/24-7. I. PYATNITSKIY A.V.  
DMITRENKO (19.9.69) Bul 16/5.5.69. Class 21b, 21c.  
Int.Cl.H 01m, H 02j.

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4  
gc  
19761804

USSR

UDC 543.70

PYATNITSKIY, I. V., and GAVRILOVA, E. F., Kiev State University  
Imeni I. G. Shevchenko, Kiev, Ministry of Higher and Secondary  
Specialized Education Ukrainian SSR

"The Extraction-Photometric Determination of Rare-Earth Elements  
Based on the Extraction of 8-Hydroxyquinolates"

Moscow, Zhurnal Analiticheskoy Khimii, Vol XXV, No 3, March 70,  
pp 445-449

Abstract: Many organic reagents used in the photometric determination of rare-earth elements are ineffective if the solution contains any complexing substances, including tataric, citric and certain other hydroxy acids.

The authors developed a method which could be used in the presence of such substances, and also investigated a number of rare-earth elements not previously studied in this connection. This was demonstrated by extraction of the 8-hydroxyquinolates of lanthanum, neodymium, samarium, europium, gadolinium, dysprosium, holmium, erbium, thulium and ytterbium, with the use of chloroform, in the presence and also in the absence of tataric and citric acids.

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USSR

PYTNITSKIY, I. V., et al., Zhurnal Analiticheskoy Khimii, Vol XXV, No 3, March 70, pp 445-449.

From the experimental data obtained, the authors also determined the optimal conditions for complete extraction from hydroxy acid solutions, the extraction constants, the absorption spectra, and the molar extinction coefficients of the rare-earth - 8-hydroxyquinolate solutions in chloroform.

2/2

1/2 012  
TITLE--STUDY OF TITANIUM AND ZIRCONIUM COMPLEXES WITH OXYACIDS BY THE  
EXTRACTION METHOD -U-  
AUTHOR-(02)-PYATNITSKIY, I.V., GRIGALASHVILI, K.I.  
COUNTRY OF INFO--USSR  
SOURCE--SOOBSHCH. AKAD. NAUK GRUZ. SSR: 57: 53-6(JAN 1970)  
DATE PUBLISHED--JAN70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--TITANIUM COMPOUND, ZIRCONIUM COMPLEX, HYDROXYL RADICAL,  
SUCCINIC ACID, COMPLEX COMPOUND  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FAME--2000/0906  
CIRC ACCESSION NO--AP0124567  
STEP NO--UR/0251/70/057/000/0053/0056  
UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0124567

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE COMPOSITION AND STABILITY OF  
TITANIUM COMPLEXES WITH GLYCERIC, GLYCOLIC, AND DIHYDROXYTARTARIC  
(INDEXED AS TETRAHYDROXYSUCCINIC) ACIDS AND ZIRCONIUM COMPLEXES WITH  
LACTIC ACIDS WERE STUDIED BY THE EXTRACTION METHOD IN A LARGE INTERVAL  
OF PH. THE CONSTANTS OF HYDROLYTIC INSTABILITY WERE CALCULATED.  
FACILITY: TBILISI STATE UNIV., USSR.

UNCLASSIFIED

USSR

UDC: 661.882

*P*  
~~FIATNITSKIY, I.V.~~, and GRIGALASHVILI, K.I., Tbilisi State University, Tbilisi,  
Committee for Higher and Secondary Education Georgian SSR; Kiev State University  
imeni T.G. Shevchenko, Kiev, Ministry of Higher and Secondary Specialized  
Education Ukrainian SSR

"Study of Titanium and Zirconium Complexes With Hydroxyacids by the Extraction  
Method"

Tbilisi, Soobshcheniya Akademii Nauk Gruzinskoy SSR, Vol 57, No 1, Jan 70, pp 53-56

Abstract: The composition and stability of titanium complexes with glyceric, glycolic and dihydroxytartaric acids and a zirconium complex with lactic acid were studied by the extraction method in both acidic and basic solutions. Constants of hydrolytic instability calculated: titanium glyceric acid complex in acid medium,  $1.5 \cdot 10^{-15}$ ; titanium glyceric acid complex in basic medium,  $1.0 \cdot 10^{-31}$ ; titanium glycolic acid complex in acid medium,  $1.5 \cdot 10^{-15}$ ; titanium dihydroxytartaric acid complex in acid medium,  $8.5 \cdot 10^{-17}$ ; titanium glycolic acid complex in basic medium,  $3.7 \cdot 10^{-23}$ ; zirconium lactic acid complex,  $3.0 \cdot 10^{-18}$ .

1/1

1/2 013 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--COMPLEXES OF IRON WITH LACTIC ACID IN SOLUTIONS -U--  
AUTHOR--(02)--PYATNITSKIY, I.V., KOLOMIYETS, L.L.  
COUNTRY OF INFO--USSR  
SOURCE--UKR. KHM. ZH. 1970, 36(1), 79-86  
DATE PUBLISHED--70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--ORGANOIRON COMPOUND, ORGANIC COMPLEX COMPOUND, LACTIC ACID,  
TITANIUM COMPOUND, IRON COMPOUND  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--2000/2206 STEP NO--UR/0073/70/036/001/0079/0086  
CIRC ACCESSION NO--AP0125786  
UNCLASSIFIED

2/2 013

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125786

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CU(II), AL(III), AND ZR(IV) ARE NOT PPTD. BY BASE IN THE PRESENCE OF LACTATE ION(L). THE PH OF PPTN. IS GREATLY INCREASED BY THE PRESENCE OF LACTATE FOR FE(III), TI(IV), AND BI(III). BY USING ISOMOLAR SERIES, SHIFTS IN EQUIL. WITH CONC., AND METAL INDICATOR STUDIES (SULFOSALICYLIC ACID (SSAL) WAS USED AS THE INDICATOR), THE FOLLOWING COMPLEXES WERE ESTABLISHED (PH RANGE, FORMULA, AND INSTABILITY CONST. GIVEN: 2, ((MECHOHCO SUB2)FE) PRIME2 POSITIVE, (2.7 PLUS OR MINUS 0.8) TIMES 10 PRIME NEGATIVE4; 4-5, FEL SUB2 PRIME NEGATIVE (7.1 PLUS OR MINUS 0.4) TIMES 10 PRIME NEGATIVE27; 4-7, FE(SSAL)(L), (3.7 PLUS OR MINUS 0.2) TIMES 10 PRIME NEGATIVE26.

FACILITY: KIEV. GOS. UNIV. IM. SHEVCHENKO, KIEV, USSR.

UNCLASSIFIED



1/2 016 UNCLASSIFIED PROCESSING DATE--13NOV70  
TITLE--ANION EXCHANGE SEPARATION OF ALUMINUM AND GALLIUM FROM INDIUM,  
IRON, AND COPPER USING LACTIC ACID -U-  
AUTHOR--(02)-PYATNITSKIY, I.V., KOLOMIYETS, L.L.  
COUNTRY OF INFO--USSR  
SOURCE--ZH. ANAL. KHIM. 1970, 25(3), 479-81  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--ALUMINUM, GALLIUM, INDIUM, IRON, COPPER, LACTIC ACID, ANION  
EXCHANGE RESIN, CHEMICAL SEPARATION/(U)AY17 ANION EXCHANGER  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1999/1066 STEP NO--UR/0075/70/025/003/0479/0481  
CIRC ACCESSION NO--AP0123059  
UNCLASSIFIED

272 016  
CIRC ACCESSION NO--AP0123059 UNCLASSIFIED  
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A METHOD WAS DEVELOPED FOR THE ION  
EXCHANGE SEPN. OF AL AND GA FROM IN, FE, AND CU UNDER STATIC CONDITIONS.  
THE NEG. CHARGED LACTATE COMPLEXES OF THE ABOVE METALS ARE ABSORBED  
FROM WEAKLY ACID SOLNS. BY AV-17 ANION EXCHANGER IN THE OH PRIME  
NEGATIVE FORM; AL AND GA CAN BE ELUTED WITH A NaOH SOLN. AS ALUMINATES  
AND GALLATES. THE METHOD WAS TESTED ON ARTIFICIAL MIXTS. AND ON STD.  
SAMPLES OF AL BRONZE AND SILICATES. DISSOLVE 0.02-0.03 G BRONZE IN 5 ML  
1:15 HNO SUB3 WHILE HEATING, COOL, DIL. TO 100 ML WITH H SUB2 O. TO A  
10 ML ALIQUOT ADD 3 ML 1M LACTIC ACID, ADJUST TO PH 4 AND THEN DIL. TO  
25 ML WITH H SUB2 O. SHAKE 10 ML OF THIS SOLN. WITH 0.5-0.7 G AV-17  
ANION EXCHANGER FOR 15 MIN, THEN ADD 1 ML 10PERCENT NaOH AND SHAKE FOR 2  
HR. FILTER, WASH WITH H SUB2 O, ADJUST THE FILTRATE TO PH 4 FOR AL  
DETN., AND PH 3 FOR GA DETN. WITH HNO SUB3, DIL. TO A FIXED VOL. WITH H  
SUB2 O AND DET. AL OR GA PHOTOMETRICALLY BY USING 8-HYDROXYQUINOLINE AT  
360 NM. WHEN DETG. AL AND GA IN SILICATES FUSE 1.2-1.5 G WITH Na SUB2  
CO SUB3, LEACH WITH HCL, FILTER, AND THEN PPT. AL, FE, AND TI WITH NH  
SUB4 OH. FILTER, DISSOLVE THE PPT. IN 25 ML 2N HNO SUB3, DIL. TO 50 ML  
WITH H SUB2 O AND CONTINUE ON 1 ML ALIQUOT AS ABOVE. FACILITY:  
KIEV STATE UNIV., KIEV, USSR.

UNCLASSIFIED

USSR

BYATNITSKIY, I. V., GUSEVICH, N. M., and SERISEN, I. V. Kiev State University, G. Shevchenko, Kiev, Ministry of Higher and Secondary Specialized Education Ukrainian SSR

"Titanium Extraction by a Chloroform Solution of Dibutylphosphate"

Kiev, Ukrainskiy Khimicheskiy Zhurnal, Vol 36, No 8, Aug 71, pp 130-131

Abstract: The authors investigated the extraction of titanium and its peroxide complex by a chloroform solution of dibutylphosphate (DBP). The extraction process was studied in relation to the pH of the solution and the concentration of DBP. Maximum extraction was observed at pH 1. The resultant compounds are  $Ti(DBP)_4$  or  $TiDBP_4 \cdot 4H_2O$ , depending on the concentration of DBP in the chloroform. It was shown that the dibutylphosphate titanium complex in chloroform is capable of attaching hydrogen peroxide to yield a colored peroxide complex with a  $Ti:H_2O_2$  ratio of 1:1. The molar coefficient of absorption of this complex at  $\lambda = 365 \text{ m}\mu$  is 700. A photometric extraction method was developed for determination of titanium in the form of the complex  $Ti-H_2O_2-DBP$ .

1/1

1/2 008  
TITLE--COMPLEXES OF IRON, III, WITH ALPHA ETHOXYPROPIONIC ACID IN SOLUTION  
-U-  
AUTHOR--(02)-KOLOMIYETS, L.L., PYATNITSKIY, I.V.  
COUNTRY OF INFO--USSR  
SOURCE--UKR. KHM. ZH. 1970, 36(4), 375-9  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--IRON COMPOUND, COMPLEX COMPOUND, PROPIONIC ACID, OXYGEN  
COMPOUND, HETEROCYCLIC OXYGEN COMPOUND  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3008/0900  
CIRC ACCESSION NO--AP0137928  
STEP NO--UR/0073/70/036/004/0375/0379  
UNCLASSIFIED

2/2 008

CIRC ACCESSION NO--AP0137928

UNCLASSIFIED

PROCESSING DATE--04DEC70

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE IONIZATION CONST. OF ALPHA ETHOXYPROPIONIC ACID (I) IS 2.2 TIMES 10 PRIME NEGATIVE4. A METAL INDICATOR METHOD WITH SULFOSALICYCLIC ACID AS AN INDICATOR INDICATES THAT FE PRIME3 POSITIVE FORMS A 1:1 COMPLEX, INSTABILITY CONST. 1.2 TIMES 10 PRIME NEGATIVE3, AT PH 2 AND A 1:2 COMPLEX, INSTABILITY CONST. 2.3 TIMES 10 PRIME NEGATIVE6, AT PH 3 WITHI. AT PH 3.5, NO COMPLEX FORMS, BUT FE(OH) SUB3 BEGINS TO PPT. THIS IS IN CONTRAST WITH LACTIC ACID WHICH FORMS A SOL. COMPLEX WITH FE PRIME3 POSITIVE WHICH IS STABLE TO PH 8. THIS IS ATTRIBUTED TO THE FORMATION OF A MORE STABLE COMPLEX OF STRUCTURE II.

FACILITY: KIEV. GOS. UNIV. IM. SHEVCHENKO, KIEV, USSR.

UNCLASSIFIED

1/2 018

UNCLASSIFIED

PROCESSING DATE--30OCT70

TITLE--EXTRACTION AND PHOTOMETRIC DETERMINATION OF RARE EARTH ELEMENTS AS  
8-HYDROXYQUINOLINATES -U-  
AUTHOR--(02)-PYATNITSKIY, I.V., GAVRILOVA, E.F.

P

COUNTRY OF INFO--USSR

SOURCE--ZH. ANAL. KHIM. 1970, 25(3), 445-50

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--RARE EARTH METAL, PHOTOMETRIC ANALYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1996/1903

STEP NO--UR/0075/70/025/003/0445/0445

CIRC ACCESSION NO--AP0118865

UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0118865

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EXTN. OF 8, HYDROXYQUINOLINATES OF LA, ND, SM, EU, GD, DY, HO, ER, TM, AND YB WITH CHCL SUB3 IN THE PRESENCE AND IN THE ABSENCE OF TARTARIC ACID AND CITRIC ACID WAS STUDIED. OPTIMUM CONDITIONS FOR THE COMPLETE EXTN. OF HYDROXY ACID SOLNS. (PH 8.5-9.5 CONCN. OF 8, HYDROXYQUINOLINE IN CHCL SUB3 0.1-0.5M) WERE FOUND AND THE EXTN. CONSTS. WERE CALCD., THE ABSORPTION SPECTRA WERE MEASURED, AND THE MOLAR ABSORPTIVITIES OF THE RARE EARTH 8, HYDROXYQUINOLINATES IN CHCL SUB3 WERE FOUND. AN EXTN. PHOTOMETRIC METHOD IS SUGGESTED FOR THE DETN. OF RARE EARTHS IN SOLNS. CONTG. TARTARIC OR CITRIC ACIDS. TO 10-15 ML OF RARE EARTH CHLORIDE OR NITRATE SOLN. AT PH 8.5-9.5 CONTG. IS SMALLER THAN 0.2M TARTARIC OR 0.1-0.05M CITRIC ACID, ADD 10 ML 8, HYDROXYQUINOLINE IN CHCL SUB3 (0.5M FOR LA, ND, SM; 0.3M FOR EU, GD; 0.1M FOR DY, HO, ER, TM, AND YB) AND SHAKE FOR 5 MIN. SEP. THE ORG. LAYER AND DIL. TO 25 ML WITH CHCL SUB3. MEASURE THE ABSORBANCE AT 370-80 NM. FACILITY: KIEV. STATE UNIV., KIEV, USSR.

UNCLASSIFIED

1/2 023 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--ANALYTICAL EXTRACTION OF METALS BY N-ENANTHIC ACID IN THE PRESENCE  
OF AMINES -U-  
AUTHOR-(02)-PYATNITSKY, I.V., SUKHAN, V.V.  
COUNTRY OF INFO--USSR  
SOURCE--UKRAIN. KHIM. ZHUR., JAN 1970, 36, (1), 97-98  
DATE PUBLISHED----JAN70  
SUBJECT AREAS--CHEMISTRY, MATERIALS  
TOPIC TAGS--METAL PHOTOMETRIC ANALYSIS, HYDROLYSIS, IRON, COBALT, COPPER,  
TITANIUM, METAL CHEMICAL ANALYSIS  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1996/2000 STEP NO--UR/0073/70/036/001/0097/0098  
CIRC ACCESSION NO--AP0118959  
UNCLASSIFIED



2/2 023

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0118959

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PROBLEMS ARISING IN THE EXTRACTION OF CERTAIN METALS (FE, CO, CU, TI) BY N-ENANTHIC ACID ARE DISCUSSED. THUS IN THE ORDINARY TECHNIQUE THERE IS A CONSIDERABLE DEGREE OF HYDROLYSIS. THE INTRODUCTION OF VARIOUS AMINES PREVENTS THE FORMATION OF THE HYDROXIDES OF THE METALS AND IMPROVES THE QUALITY OF THE EXTRACTION. MOREOVER, EXTRACTION WITH ENANTHIC ACID IN THE PRESENCE OF CERTAIN AMINES MAY BE DIRECTLY EXPLOITED IN THE EXTRACTION PHOTOMETRIC DETERMINATION OF THE METALS.

UNCLASSIFIED

Acc. Nr.

AP0053891

Abstracting Service:  
CHEMICAL ABST. 6/70

Ref. Code

4R 0025

117277y Peroxide-fluoride and peroxide-tartrate complexes of titanium and niobium in solutions. Pyatnitskii, I. V.; Dao-Van-Chung (Kiev State Univ., Kiev, USSR). Zh. Anal. Khim. 1970, 25(1), 103-7 (Russ). The interaction of Ti and Nb peroxide complexes with tartaric acid and NaF were studied spectrophotometrically. These complexes are formed in a wide acidity range (pH 0-5). At pH 1-3 the compn. of the complexes is  $\text{TiOH}_2\text{O}_2^{2+}$  and  $\text{TiOH}_2\text{O}_2\text{F}^+$  (max. absorbance at 360 nm). The Ti-tartrate complex formula is  $[\text{TiOH}_2\text{O}_2(\text{C}_4\text{H}_4\text{O}_6)_2]^{2-}$ , absorbance max at 245 nm at pH 1. The 1:1 Nb- $\text{H}_2\text{O}_2$  complex forms in the acidity range 1M  $\text{H}_2\text{SO}_4$  to pH 5 and has an absorbance max. at 255 nm at pH 1. The compn. of the complex with fluoride ions is  $\text{NbOH}_2\text{O}_2\text{F}^{2+}$ . Tartaric acid destroys the peroxide complex of Nb at pH 1 to form  $\text{NbO}(\text{C}_4\text{H}_4\text{O}_6)_2^-$ .  
Chaim Weiner

REEL/FRA  
19830968

RN.

18

USSR

UDC: 533.9.08+533.9.15

PYATNITSKIY, I. N., KOROBKIN, V. V., MUSHINSKIY, A. A., KHAUSTOVICH, G. P.,  
State Scientific Research Institute of Power Engineering imeni G. M.  
Khrzhizhanovskiy, Moscow

"Use of the Method of Scattering to Determine the Parameters of a Low-  
-Temperature Plasma"

Moscow, Doklady AN SSSR, Vol 200, No 3, 1971, pp 571-574

Abstract: The paper outlines the difficulties which have stood in the way of application of the scattering method to the study of low-temperature plasmas. The principal obstacle is the difficulty of registering the electron densities and scattering spectrum at low temperatures. It is assumed that limiting conditions are reached when the intensity of the illumination becomes equal to the average intensity of the electron component at a distance of half the width of the electron component from the central line. The authors discuss the results of measurements of the parameters of electrons in a plasma with an electron density of the order of  $10^{15}/\text{cc}$ , and they evaluate the lower relative limit of such measurements. The plasma source was a tungsten-electrode carbon-arc discharge at atmospheric pressure. The source of the

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PYATNITSKIY, L. N., et al., Doklady AN SSSR, Vol 200, No 3, 1971 pp 571-574  
radiation probe was a ruby laser. The emission pulse had a duration of 50 ns  
and an energy of about 1 J. The scattering spectrum was registered from a  
region with a volume of about 0.01 mm<sup>3</sup>. The scattered light was observed at  
angles of 45 and 90°. The results of the experiments show that there is a  
real possibility of using the method of scattering to study a low-temperature  
plasma down to electron densities of the order of 10<sup>12</sup>/cc. Two figures, one  
table, bibliography of twelve titles.

2/2

- 65 -

USSR

UDC 533.95:538.4

PYATNITSKIY, L. N., KHAUSTOVICH, G. P., and KOROCHKIN, V. A.

"Calculation of Plasma Parameters on the Basis of the Characteristics of the Spectra of Scattered Light"

V sb. Teplofiz. svoystva nizkoterperaturn. plazmy (Physical Properties of a Low-Temperature Plasma -- Collection of Works), Moscow, "Nauka", 1970, pp 34-37 (from RZh-Fizika, No 4, Apr 71, Abstract No 4G51)

Translation: A method for determining the parameters of a plasma on the basis of the characteristics of the electron component of the scattering spectrum without requiring knowledge of the absolute values of the intensities of the scattered radiation is discussed. Used as characteristics of the spectrum are the half-width of the satellites of the scattered light and the position of their maxima. The computational method is given for the first approximation of the theory and for the exact solution. Authors abstract.

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Acc. Nr: **AP0040875** *P*

Ref. Code:

**UR 0103**

PRIMARY SOURCE: Avtomatika i Telemekhanika, 1970, Nr 1, pp 5-15

**ABSOLUTE STABILITY OF NONSTATIONARY NONLINEAR SYSTEMS**

Pyatnitskiy, Ye. S.

The necessary and sufficient conditions for the absolute stability of nonlinear non-stationary systems are determined. It has been shown that the problem of the absolute stability of a nonlinear system with a nonstationary nonlinearity is equivalent to the problem of investigating the asymptotic instability in the small of the position of equilibrium of a certain concrete piecewise-linear system.

*1/*  
REEL/FRAME  
**19750614**  
*4* *Ref*

1/2 012

TITLE--ABSOLUTE STABILITY OF  
FORCED MOVEMENTS -U-  
AUTHOR--PYATNITSKIY, YE.S.

UNCLASSIFIED

PROCESSING DATE--30OCT70

COUNTRY OF INFO--USSR

SOURCE--AVTOMATIKA I TELEMEXHANIKA, 1970, NR 3, PP 5-15

DATE PUBLISHED--70

SUBJECT AREAS--MATHEMATICAL SCIENCES, MECH., IND., CIVIL AND MARINE ENGR  
TOPIC TAGS--NONLINEAR SYSTEM, CONTROL SYSTEM STABILITY, DYNAMIC SYSTEM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1988/1558

STEP NO--UR/0103/70/000/003/0005/0015

CIRC ACCESSION NO--AP0106304

UNCLASSIFIED

2/2 012

CIRC ACCESSION NO--AP0106304

UNCLASSIFIED

PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THERE ARE INVESTIGATED THE PROPERTIES OF FREE AND FORCED MOVEMENTS IN A NONLINEAR SYSTEM WITH A NONSTATIONARY NONLINEARITY IN THE ANGLE OF ABSOLUTE STABILITY. IT IS SHOWN THAT THE PROCESSES IN ABSOLUTELY STABLE SYSTEMS IN A NUMBER OF THEIR IMPORTANT PROPERTIES ARE SIMILAR TO THE PROCESSES IN STABLE LINEAR SYSTEMS. THE GENERALIZATION OF THE RESULTS TO THE SYSTEMS WITH MANY NONLINEAR ELEMENTS IS PRESENTED.

UNCLASSIFIED



USSR

UDC 669.295.022

PYATNOV, V. I.

"Basic Requirements of Industry for Ilmenite Concentrates"

Redk. Elementy. Syr've i Ekon. [Rare Elements, Raw Materials and Economics -- Collection of Works], No 2, Moscow, 1970, p 129-131. (Translated from Referativnyy Zhurnal Metallurgiya, No 2, 1972, Abstract No 26188 by S. Krivonosova).

Translation: The basic requirements for ilmenite concentrates are: for metallurgical production,  $\text{TiO}_2$  content in unprocessed ilmenite  $>45\%$ , for processed ilmenite  $>50-60\%$ ; maximum content of  $\text{SiO}_2$ ,  $\text{Al}_2\text{O}_3$  and  $\text{Cr}_2\text{O}_3$  in concentrate  $<1.0-1.5\%$  each. The content of Fe is not limited, remaining impurities  $<4-5\%$ ; for the chemical industry:  $\text{Cr}_2\text{O}_3 < 0.3\%$ , ratio  $\text{Fe}^{2+}:\text{Fe}^{3+} < 0.5$ . A diagram is presented of the changes in the properties of ilmenite as it is converted to leucoxene. Determination of the peculiarities of ilmenite in new placer deposits in the first stages of processing is of great significance for evaluation of deposits, calculation of economic indicators during detailed prospecting and determination of effective uses for the ore. 1 table; 2 biblio refs.

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USSR

NAUMOV, YU. A., BAZHANOVA, L. G., KNYAZEVA, A. P., PYATKOVA, YU. B., and  
CHUDOV, L. N.

"Synthetic Methods for  $\alpha$ -Naphthyl N-Methylcarbamate"

V sb. Khim. sredstva zashchity rast. (Chemical Plant Protective Agents --  
collection of works), No 2, Moscow, 1972, pp 36-40 (from RZh-Khimiya, No 19,  
Oct 73, Abstract No 19N482)

Translation: A review is given of the synthetic methods for  $\alpha$ -naphthyl-N-  
methylcarbamate. The method for the synthesis of naphthylcarbamate based on  
methylisocyanate was considered to be the best one and chosen for detailed  
technological development and expansion to the production level.

USSR

UDC 632.95

BOGOMOLOVA, L. M., LUTSENKO, V. A., and PYATNOVA, Yu. B.

"Study of Admixtures and Decomposition Products of Editon by Thin-Layer Chromatography"

V sb. Khim. sredstva zashchity rast. (Chemical Protection of Plants -- collection of works), No 3, Moscow, 1973, pp 139-143 (from RZh-Khimiya, No 22, 25 Nov 73, Abstract No 22N 550 by G. A. Kosminskaya)

Translation: Study of admixtures and decomposition products of commercial editon [3,3'-ethylene-bis-(4,6-dimethyltetrahydro-1,3,5-thiadiazinethion-20)] by thin-layer chromatography. Silicic acid is the best sorbent. Commercial editon contains ethylenethiourea (main admixture), ethylenethiuram-monosulfide, ethylenethiuram-disulfide, S, and a product of undetermined structure. After chromatographically pure editon is stored for 3 to 5 months, the chromatogram shows the same admixtures as a commercial sample. Moreover, the stability of editon decreases sharply when stored in solutions in which the content of ethylenethiourea and S increases perceptibly within a few hours.

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USSR

UDC 632.95

ORLOV, S. I., ZAVIZION, L. P., and PYATNOVA, Yu. B.

"Determination of Admixtures in Dithiocarbamate Derivatives by Thin-Layer Chromatography"

V sb. Khim. sredstva zashchity rast. (Chemical Protection of Plants -- collection of works), No 3, Moscow, 1973, pp 136-138 (from RZh-Khimiya, No 22, 25 Nov 73, Abstract No 22N551 by G. A. Kosminskaya)

Translation: To identify ethylenedithiocarbamate (EDTC) derivatives by thin-layer chromatography, silicic acid was used as a sorbent and EtOH+CHCl<sub>3</sub>(1:16.5) as solvents to separate the components. The EDTC derivatives contained ethylenethiourea, ethylenethiuram-monosulfide, ethylenethiuram-disulfide, S, and 2 unidentified substances. The admixtures detected were of the original substance - NH<sub>4</sub> salt of EDTC.

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USSR

UDC: 632.95

BOGOMOLOVA, L. M., LUTSENKO, V. A., PYATNOVA, Yu. B., Shchelkovo  
Affiliate of the All-Union Scientific Research Institute of  
Chemical Agents for Plant Protection

"A Method of Stabilizing 3,3'-Ethylene-bis-[4,6-Dimethyltetra-  
hydro-1,3,5-Thiadiazinethione-2]"

USSR Author's Certificate No 345910, filed 12 Oct 70, published  
18 Aug 72 (from RZh-Khimiya, No 10, May 73, abstract No 10N588P  
by T. A. Belyayeva)

Translation: In order to extend the storage time of 3,3'-ethylene-bis-  
-(4,6-dimethyltetrahydro-1,3,5-thiadiazinethione-2), 2-5% of ethylene thiourea  
and/or thiourea is added. The results of analysis (with respect to CS<sub>2</sub>) show  
that the chemical remains stable over an 8-month period.

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USSR

UDC 632.95

RYATKOVA, YU. B., GOLUBEVA, V. A., GOLYSKIN, N. M., UKRAINETS, N. S.,  
ABELENTSEV, V. I., FEDOSENKO, L. G., VISHNEVSKAYA, A. M., PUSTOVYTOVA, V. I.,  
and DYUKHSHERSTOV, N. G.

"Editone"

Khim. sredstva zashchity rast. (Chemical Means of Protecting Plants --  
collection of works), Issue 1-M, 1970, pp 129-134 (Referativnyi Zhurnal --  
Khimiya, No 10, (II), 1972, Abstract No 10H550 by T. A. Belyayeva)

Translation: Investigation of editone -- 3,3'-ethylene-bis-4,6-dimethyl-  
trahydro-1,3,5-thiadiazin-2-one (I) -- in laboratory conditions in vitro  
showed that I is equivalent in fungicidal property to Phygon and offers no  
threat to green plants. The effectiveness of I in countering apple scab,  
grapevine mildew, cherry-plum Clasterosporium, nonlial blight, grey mold  
of cherry trees, and Macrosporium in tomatoes is equal to or exceeds the  
effectiveness of zineb and copper oxychloride (concentration 0.25-0.125%)  
and of Bordeaux mixture in 1% concentration. I is not effective in combatting  
powdery mildew.

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USSR

UDC: 621.372.41

ALEKSANDROV, B. V., PYATOSHIN, P. M.

"A Device for Precision Tuning of Evacuated Quartz Resonators"

USSR Author's Certificate No 269236, filed 15 Nov 63, published 30 Oct 70  
(from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6v447 P)

Translation: A device is proposed for precision tuning of evacuated quartz resonators. The device contains a thermostatically controlled cabinet for accommodation of the resonators being tuned, a unit for applying voltage to an auxiliary electrode introduced into the evacuated resonator tank, a frequency meter, and an actuating unit. For the purpose of automatically controlling the direction of adjustment and automatically connecting the next resonator to the tuning module, the frequency meter is made in the form of three discriminators connected in parallel, the inputs of the discriminators being connected to a mixer which combines the frequency of the reference oscillator with that of an oscillator stabilized by the resonator being tuned, while the discriminator outputs are connected to a mismatch indicator switch and an adjustment polarity switch connected to the actuating unit which is equipped with a commutator for the resonators located in the thermostatically controlled cabinet.

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USSR

B. Information Theory

PYATOSHIN, YU. P.

"Some Properties of M-Nary Communication Systems with Coding in a Semi-continuous Channel"

Probl. Peredachi Inform. [Problems of Information Transmission], 1973, 9, No 2, pp 2-23 (Translated from Referativnyy Zhurnal Kibernetika, No 9, 1973, Abstract No 9V473)

Translation: A communication system with  $m(m \geq 2)$  equidistant signals is studied when there is additive white Gaussian noise. It is assumed that the input of the channel is discrete while the output is continuous (time is considered discrete). Asymptotic formulas ( $m \rightarrow \infty$ ) are produced for the throughput capacity of the semicontinuous channel, and curves are constructed showing with which values of signal/noise ratio and transmission rate it is possible to transmit information with arbitrarily low error probability.

Author's view

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1/2 022 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--ROTATIONAL MOTION IN ODD MASS DEFORMED NUCLEI --U-  
AUTHOR--(02)--PYATOV, N.I., CHERNEY, M.I. *P*  
COUNTRY OF INFO--USSR  
SOURCE--(JINR-PR-4966) 1970, 39P. DEP. CFSTI  
DATE PUBLISHED-----70  
SUBJECT AREAS--PHYSICS  
TOPIC TAGS--DEFORMED NUCLEUS, ROTATION, EXCITED STATE, NUCLEAR REACTION  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3001/1553 STEP NO--UR/0000/70/000/000/0001/0039  
CIRC ACCESSION NO--AT0127049  
UNCLASSIFIED

2/2 022

CIRC ACCESSION NO--AT0127049  
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--3000170

ABSTRACT. THE PRESENT STATUS OF THE THEORY OF ROTATIONAL MOTION IN ODD MASS DEFORMED NUCLEI IS REVIED. CRANKING MODEL DESCRIPTION OF ROTATIONAL BANDS BASED ON INTRINSIC EXCITED STATES IS CONSIDERED. SPECIAL ATTENTION IS PAID TO THE EFFECTS OF COUPLING OF INTRINSIC AND ROTATIONAL MOTION WHICH HAVE BEEN REVEALED RECENTLY IN NUCLEAR REACTION STUDIED. SOME NONADIABATICAL METHODS ARE DISCUSSED AND THE EXAMPLES OF NONADIABATIC CALCULATIONS ARE PRESENTED. (48 REFERENCES).  
FACILITY: JOINT INST. FOR NUCLEAR RESEARCH, DUBNA, USSR, LAB. OF THEORETICAL PHYSICS.

UNCLASSIFIED

011  
UNCLASSIFIED  
PROCESSING DATE--16OCT70  
TITLE--NONADIABATIC CALCULATION OF POSITIVE PARITY STATES IN ERBIUM 161  
AND ERBIUM 163 -U-  
AUTHOR--(03)-BAZNAT, M.I., CHERNEI, M.I., PYATOV, N.I. P  
COUNTRY OF INFO--USSR  
SOURCE--PHYS. LETT. B 1970, 31(4), 192-4  
DATE PUBLISHED-----70  
SUBJECT AREAS--PHYSICS, NUCLEAR SCIENCE AND TECHNOLOGY  
TOPIC TAGS--PARITY PRINCIPLE, NUCLEAR MODEL, ERBIUM ISOTOPE, NUCLEAR SPIN,  
EXCITED NUCLEUS  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1982/0674  
CIRC ACCESSION NO--AP0052133  
STEP NO--NE/0000/70/031/004/0192/0194  
UNCLASSIFIED

2/2 011

CIRC ACCESSION NO--AP0052133  
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--16OCT70

ABSTRACT. A CALC. OF POS. PARITY STATES IN  
PRIME161 ER AND PRIME163 ER, WITHIN THE NONADIABATIC ROTATIONAL MODEL,  
HAS BEEN PERFORMED, BY TAKING THE CORIOLIS COUPLING OF 7 SAXON WOODS  
POTENTIAL ORBITALS INTO ACCOUNT. TWO PARAMETERS, THE ROTATIONAL  
PARAMETER H PRIME2 OVER 2 PHI AND THE EFFECTIVE PAIRING FORCE STRENGTH G  
SUBEFF WERE USED IN THE CALC. A SATISFACTORY FIT OF THE CALC. TO THE  
EXPTL. ENERGY LEVELS WITH SPIN VALUES UP TO PRIME TWENTY NINE HALVES CAN  
BE ACHIEVED ONLY IF A STRONGLY REDUCED PAIRING FORCE AND ROTATIONAL  
PARAMETER VALUES CLOSE TO THOSE FOR NEIGHBORING EVEN NUCLEI ARE USED.  
FACILITY: JOINT INST. NUCL. RES., DUBNA, USSR.

UNCLASSIFIED

1/2 022 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--ROTATIONAL MOTION IN ODD MASS DEFORMED NUCLEI -U-  
AUTHOR--(02)--PYATOV, N.I., CHERNEY, M.I.  
COUNTRY OF INFO--USSR  
SOURCE--(JINR-PR-4966) 1970, 39P. DEP. CFSTI  
DATE PUBLISHED-----70  
SUBJECT AREAS--PHYSICS  
TOPIC TAGS--DEFORMED NUCLEUS, ROTATION, EXCITED STATE, NUCLEAR REACTION  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3001/1553 STEP NO--UR/0000/70/000/000/0001/0039  
CIRC ACCESSION NO--AT0127049  
UNCLASSIFIED

2/2 022

CIRC ACCESSION NO--AT0127049

UNCLASSIFIED

PROCESSING DATE--30OCT7C

ABSTRACT/EXTRACT--(U) GP-0-- ABSTRACT. THE PRESENT STATUS OF THE THEORY OF ROTATIONAL MOTION IN ODD MASS DEFORMED NUCLEI IS REVIED. CRANKING MODEL DESCRIPTION OF ROTATIONAL BANDS BASED ON INTRINSIC EXCITED STATES IS CONSIDERED. SPECIAL ATTENTION IS PAID TO THE EFFECTS OF COUPLING OF INTRINSIC AND ROTATIONAL MOTION WHICH HAVE BEEN REVEALED RECENTLY IN NUCLEAR REACTION STUDIED. SOME NONADIABATICAL METHODS ARE DISCUSSED AND THE EXAMPLES OF NONADIABATIC CALCULATIONS ARE PRESENTED. (48 REFERENCES). FACILITY: JOINT INST. FOR NUCLEAR RESEARCH, DUBNA, USSR, LAB. OF THEORETICAL PHYSICS.

UNCLASSIFIED

Veterinary Medicine

USSR

UDC 619:616.981.452+636.4

RYATROV, V. F., and ANTSYUKOV, M. A.

"Immunogenesis Indicators in Pigs Vaccinated Simultaneously Against Aujeszky's Disease, Paratyphoid and Pasteurellosis"

Minsk, Izvestiya Akademii Nauk BSSR, Seriya Sel'skokhozyaystvennykh Nauk, No 1, 1972, pp 121-125

Abstract: It has been established that the phagocytic activity of leucocytes increased not earlier than 15 days following the third inoculation of young pigs against Aujeszky's disease, paratyphoid, and pasteurellosis with a complex of three vaccines or each one given individually. The quantity of leukocytes maximally saturated with glycogen in the same pigs increased to a different degree 15 days after each vaccination. The amount of RNA in the blood lymphocytes did not change. The concentration of RNA in blood cells of 10-day-old young pigs was considerably higher than in older pigs. Preventive properties of the blood serum against pasteurellosis appeared 15 days after the third inoculation and were effective for 105 days (duration of observation) in young pigs vaccinated only against pasteurellosis. In piglets vaccinated against all three infections, the preventive properties of the blood

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USSR

PYATROW, V. F., and ANTASYUKOW, M. A., Izvestiya Akademii Nauk BSSR, Seriya  
Sel'skokhozyaystvennykh Nauk, No 1, 1972, pp 121-125

serum against paratyphoid appeared 7 days after the first immunization, the  
same as for pigs vaccinated only against paratyphoid. These properties  
were much more pronounced 15 days after the third vaccination.

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028

UNCLASSIFIED

PROCESSING DATE--09OCT70

TITLE--RADIOPHYSICAL RESEARCHES IN THE AURORAE ZONE -U-

AUTHOR--(05)-PONOMAREV, YE.A., SVERDLOV, YU.L., PYATSI, A.KH., VERSHININ,  
YE.F., TSIRS, G.P.

COUNTRY OF INFO--USSR

SOURCE--KAZDEL IV, POLYARNYYE SIYANIYA, 1970, NR 19, PP 5-11

DATE PUBLISHED-----70

SUBJECT AREAS--ASTRONOMY, ASTROPHYSICS, ATMOSPHERIC SCIENCES

TOPIC TAGS--AURORA, RADIO EMISSION, UPPER ATMOSPHERE, SOLAR ACTIVITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1994/0070

STEP NO--UR/3307/70/000/019/0005/0011

CIRC ACCESSION NO--AP0114466

UNCLASSIFIED

2/2 028

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0114466

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE PAPER DRAWS CERTAIN CONCLUSIONS AS THE RESULT OF RADAR RESEARCHES ON UHF AND SHF, AS WELL AS CONTINUOUS ULF ON THE RADIO EMISSION OF AURORAE AND THE UPPER ATMOSPHERE IN THE AURORAE ZONE, CARRIED OUT IN THE SOVIET UNION. THE PAPER PRESENTS PRELIMINARY RESULTS OF COMPARISON OF PHENOMENA IN THE PERIOD OF THE MAXIMUM AND MINIMUM OF SOLAR ACTIVITY.

UNCLASSIFIED

USSR

UDC: 621.039.5/68:004.6

YURCHENKO, Yu. F., MURAV'YEV, V. F., PYATUNIN, B. A., and MALYAVIN, B. G.

"Choice of Metal-Cutting Methods in Reactor Repair"

Moscow, Atomnaya energiya, No 6, 1973, pp 427-434

Abstract: Because of the radiation hazard in repairing reactors, there is a great deal of interest in finding and developing methods of cutting metals safely and remotely in air or under water. These methods are discussed in the present article. Mechanical or plasma methods of cutting are usually employed; the former, however, involve equipment difficult to design and construct, and are usually designed for individual operations; the latter plasma methods are limited by the thickness of the metals to be cut. It has been established that the most acceptable method for reactor repair under specific conditions is the electrical contact method since it can be done with relatively inexpensive material requiring low power levels for operation. This system is explained and various examples of its applications given.

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1/2 024 UNCLASSIFIED PROCESSING DATE--16OCT70  
TITLE--DETERMINATION OF THE ADHESION OF POLYMERIC MATERIALS TO BASE  
MATERIALS -U-  
AUTHOR-(03)-KUVARZIN, I.N., PYATYKHIN, L.I., KARYAKINA, M.I.  
COUNTRY OF INFO--USSR  
SOURCE--U.S.S.R. 263,976  
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRATZSY, TOVARNYE ZNAKI 1970,  
DATE PUBLISHED--10FEB70  
SUBJECT AREAS--MATERIALS  
TOPIC TAGS--POLYMER, ADHESION, SURFACE ACTIVE AGENT, PATENT  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FKAME--1995/1084 STEP NO--UR/0482/70/000/000/0000/0000  
CIRC ACCESSION NO--AA0116550  
UNCLASSIFIED

USSR

UDC 581.167

SHEVCHENKO, V. A., PYATYSHEV, D. R., VAULINA, E. N., and ANIKHEYEVA, I. D.

"Application of the Sector Mutant Colonies Test in the Study of the Mutation Process in *Chlorella*"

Moscow, Byulleten' Moskovskogo Obshchestva Ispytateley Prirody, Novaya Seriya, Otdel Biologicheskii, Vol 75, No 3, May/Jun 70, pp 133-145

Abstract: The mutation process of *Chlorella vulgaris* (strain LARG-1) was studied by the method of sector mutant colonies. A synchronous culture of the algae in the pro-synthetic stage (young autospores) was exposed to the short-lived action of ethylenimine. Mixed mutant clones giving rise to sector colonies predominated over pure mutant clones. Study of the sector mutant colonies indicated an ordered spatial distribution of the daughter nuclei within the mother cells. This distribution was preserved in the solid nutrient medium after passage of the autospores from the mother cell. Ethylenimine induced mass formation of sectors of the aberrant types 3/8 and 5/8 and others that were present to only a minor extent after the action of X-rays or UV light on *Chlorella*. Formation of the aberrant types cannot be explained satisfactorily at this stage. The data obtained on the types of sectors and their quantitative distribution supported the hypothesis of the cyclic polytene nature of chromosomes in *Chlorella*.

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PROCESSING DATE--16OCT70

UNCLASSIFIED

2/2 024

CIRC ACCESSION NO--AA0116550

ABSTRACT/EXTRACT--(U) GP-0-

MATERIAL TO BASE MATERIALS IS DETD. BY SUPPLYING THE ADHESIVE SUBSTRATE

BORDER OF SEPN. WITH BREAKOFF FRONT.

ABSTRACT. THE ADHESION OF POLYMERIC  
BY SUPPLYING THE ADHESIVE SUBSTRATE  
THE DISTRIBUTION RATE OF THE

"APPROVED FOR RELEASE: 09/17/2001

CIA-RDP86-00513R002202610014-3"

USSR

UDC 616-001.7

ZHIYEVSKIY, V. I., PYATYSHEV, L. I., KONRADI, G. G., and ZAMILATSKIY, YE. P.

"Cryostat with a Recharging Device for Tensile Testing Materials at 20° K"

Moscow, Zavodskaya Laboratoriya, No 10, Oct 72, pp 1271-1273

Abstract: The authors developed a cryostat which makes it possible to remove fractured samples and put new samples in without having to remove the liquid hydrogen from the working chamber. This newly developed cryostat also allows a sample to be pre-cooled, clamped and stressed in a special chamber containing liquid nitrogen before being submerged in the liquid hydrogen. Three to six samples can be tested before having to recharge the cryostat with liquid hydrogen. One figure, 3 bibliographic references.

1/1

USSR

UDC 539.257:669.24

ZMIYEVSKIY, V. I., YEGOROV, V. N., PYATYSHEV, L. I., ZAMILATSKIY, Ye. P.  
KONARDI, G. G. (Kaliningrad, Moskovskaya Oblast)

"Methods of Evaluating the Mechanical Properties and Structural Strength of  
Metal Materials at Low Temperatures"

Kiev, Problemy Prochnosti, No 12, December 1971, pp 26-29

Abstract: In the present article is briefly considered the state of the question with respect to each test category, previously conducted projects are described, and problems concerning further developments are presented on the basis of discussion. An analysis is given of the procedures for determining the mechanical characteristics of materials at temperatures down to 20° K (tests for elongation, and tests for impact viscosity with a previously created fatigue crack). Diagrams are presented for installations used in hydraulic and pneumatic tests of containers at a temperature of 20° K. 6 figures.  
3 references.

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USSR

UDC: 681.3-523.8

SOLOMONOV, L. A., P'YAVCHENKO, A. N., ZHIRKOV, V. F., BAKANOVICH, E. A., Moscow  
Higher Technical Academy imeni N. E. Bauman

"A Device for Shaping Random Time Intervals"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztzy, Tovarnyye Znaki, No 26,  
1970, Soviet Patent No 279167, Class 42, filed 4 Mar 69, p 132

Abstract: This Author's Certificate introduces a device for shaping random time intervals. The unit contains a noise voltage generator, a level quantizer, commutator, cyclic shift register, cadence generator, and AND and OR circuits. As a distinguishing feature of the patent, setting up the required law of time interval distribution is simplified by connecting the commutator outputs to some inputs of the AND circuits, connecting the outputs of the cyclic register to the other inputs of the AND circuits, and connecting the outputs of the AND circuits to the inputs of the OR circuit. The output of the OR circuit is connected to the input of the dump circuit for the cyclic register.

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USSR

UDC 681.332.64

MAKAREVICH, O. B., BAYEV, B. M., PUDZENKOV, N. A., and P'YAVCHENKO, O. N.,  
Taganrog Radio Engineering Institute

"A Computing Device"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki,  
No 3, Jan 71, Author's Certificate No 291216, Division G, filed 7 Apr 69,  
published 6 Jan 71, pp 123-124

Translation: This Author's Certificate introduces a computing device for a digital integrator. The device contains a memory device, integration modules, a multiplier, adders, a remainder register, rectifiers, and shapers. As a distinguishing feature of the patent, the device is simplified and speed is increased by connecting the outputs of the memory device to the inputs of the multipliers and parallel integration modules. Some outputs of the integration modules are connected to inputs of the memory device, while the other outputs of these modules are connected to the inputs of the multipliers. The outputs of the multipliers are connected to the inputs of the non-quantum increment adder, and the output of this adder is connected to the inputs of the increment shaper and a rectifier. The second inputs of the shaper and rectifier are connected to the outputs of the control device. The output of the rectifier is connected to the input of the remainder register, and

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USSR

MAKAREVICH, O. B., et al., Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 3, Jan 71, Author's Certificate No 291216, Division G, filed 7 Apr 69, published 6 Jan 71, pp 123-124

the other input of the register is connected to the output of the memory device. The output of the remainder register is connected to the second input of the adder which combines the partial sum with the sum of the non-quantum increments.

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Thin Films

UDC 669.1:539.216.2

USSR

KAZAKOV, V. G., KARABANOVA, V. P., BURAVIKHIN, V. A., SVETSOV, M. M.,  
P'YAVCHUK, N. N., and IVANOV, V. A., Irkutsk State Pedagogical Institute

"Effect of Elastic Stresses on Critical Fields of Thin Ferronickel Films"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 33, No 4, Apr 72, pp 864-866

Abstract: A study was made of the behavior of the coercive force  $H_c$  of thin magnetic ferronickel films under the action of stresses, since  $H_c$  essentially affects the quasi-static and pulsed remagnetization processes. The value of  $H_c$  in most cases is determined by the field of starting boundaries. Thus, dependence of  $H_c$  boundaries on the magnitude of elastic stresses in 75% Ni and 25% Fe films of different thicknesses (450, 800 and 1100 Å) was experimentally investigated. The results are discussed by reference to diagrams showing the deformation dependence of the starting field of domain boundaries ( $H_{st}$ ) and the width of the domain boundary. The dependence of  $H_{st}$  on the magnitude of applied stresses can be explained by the character of

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-USSR

KAZAKOV, V. G., et al., Fizika Metallov i Metallovedeniye, Vol 33, No 4,  
\* Apr 72, pp 864-866

structural changes of domain boundaries. Three illustrations, six  
bibliographic references.

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UDC 547.963.3

USSR

PYAYVINEN, E. A., and TIKHOMIROVA-SIDOROVA, N. A., Institute of Macromolecular Compounds, Academy of Sciences USSR

"Selective 4-N-Acetylation of 2'-Desoxycytidine-5' Phosphate"

Leningrad, Zhurnal Obshchey Khimii, Sep 71, Vol 41, No 9, pp 2076-2079

Abstract: An attempt is described to apply the Michelson method to the selective N-acetylation of adenosine-2'(3') phosphate, cytidine-2'(3') phosphate (Cp), cytidine-5' phosphate (pC), desoxycytidine-5' phosphate (dpC) and cytidine. The reaction mixtures were analyzed by paper chromatography in an ethanol-1 M  $\text{NH}_4\text{OH}$  system, pH 7.5 (7:3). Use was made of the experimental data to determine the conditions for selective quantitative acetylation of desoxycytidine-5' phosphate at the 4-amino group. The dominant role in phosphate acetylation reactions is attributed to the nature of the solvent, the nucleotide structure, i.e., the position of the phosphorus radical, the presence or absence of the 2'-hydroxyl group and the phosphorus-ester bond. All these factors appear to stimulate the selective acetylation of the amino group of the heterocyclic nucleus.

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USSR

UDC 669.71.053.4.067(088.8)

MAL'TSEVA, N. N., PYBAKOV, V. V., SHARKOV, V. I., KUYBINA, N. I.

"Method of Precipitation of Red Slimes"

USSR Author's Certificate No 307065, filed 23/03/70, published 5/08/71.  
(Translated from Referativnyy Zhurnal Metallurgiya No 3, 1972, Abstract No. 3G129P by G. Svodtseva).

Translation: Intensification of the process of precipitation of red slimes from solutions used in the production of alumina is achieved by using a polysaccharide such as xylane as a flocculant. In the case of the use of xylane, 10 minutes after the beginning of the experiment, the content of solids in the clarified layer is 2.5 times less than when polyacrylamide is used.

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USSR

UDC 621.357.7(088.8)

KARPOV, P. S., PYBAL'CHENKO, M. K., TYPITSYN, G. I., and YAKLIN, V. V.,  
Institute of Metallurgy imeni A. A. Baykov, Academy of Sciences USSR

"Electrolytic Deposition of Highly Porous Metal Layers"

USSR Author's Certificate No 324301, Filed 22 Sep 69, Published 6 Mar 72  
(from Referativnyy Zhurnal -- Khimiya, Svoyny Tom, No 23(II), 1972, Abstract  
No 231269)

Translation: The patented method uses an electrolyte containing suspended insoluble metal particles. The metal particles are of the same kind as those being deposited. The particles serve as cathode with high catalytic activity. For example, in order to obtain the Ni catalyst, a nickel carbonyl powder PNK-1 is added to the  $H_2SO_4$  electrolyte. The electrolyte composition is (g/liter):  $NiSO_4 \cdot 7H_2O$  100-150,  $Na_2SO_4$  40-60,  $H_3BO_3$  20-30,  $NaCl$  3-5, nickel carbonyl powder 75-150. The electrolytic deposition is carried out at pH 2-5,  $50^\circ C$ ,  $D_c$  4-12 a/dm<sup>2</sup> with intensive mechanical mixing of the electrolyte.

USSR

UDC 629.735.33:621.792.02/68

Tekhnologiya skleivaniya detaley v samoletostroyenii (Technology of Adhesive Bonding in Aircraft Construction), by I. I. Kapelyushnik, I. I. Mikhalev and B. D. Lydel'man (deceased), Moscow, Mashinostroyeniye, 1972, 224 p., illus., biblio, 4,500 copies printed

Describes technology of adhesive bonding of metals and nonmetallic structural materials to guarantee high strength, long service life, hermeticity, and good corrosion resistance of the joined surfaces. Gives the physical-mechanical and technological characteristics of adhesives, describes types of adhesive compounds used in aircraft construction. Emphasis is put on the choice of the most rational technological processes of adhesive bonding, production equipment, preparation and testing of adhesives, quality control and operational safety during work with adhesives.

The book is intended for a wide circle of engineering and technical personnel and may also be used as a practical manual for those responsible for technological processes involving the use of adhesives.

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USSR

3 5 5

Tekhnologiya skleivaniya detaley v samoletostroyenii (Technology of Adhesive Bonding in Aircraft Construction), by I. I. Karylyushnik et al, Moscow 1972..

Contents

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1/2 009 UNCLASSIFIED PROCESSING DATE--13NOV70  
TITLE--VARIETY DIFFERENCES IN THE REACTION OF WINTER WHEAT TO THE USE OF  
CHLOROCHOLINE CHLORIDE IN THE UKRAINIAN STEPPE -U-  
AUTHOR-(03)-ZADONTSEV, A.I., PIKUSH, G.R., PYKHTIN, N.I.

COUNTRY OF INFO--USSR

SOURCE--AGROKHIMIYA 1970, (3), 99-109

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--WHEAT, CHLORIDE, HERBICIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--2000/0153

STEP NO--UR/0485/70/000/003/0099/0109

CIRC ACCESSION NO--AP0123924

UNCLASSIFIED

2/2 009 UNCLASSIFIED PROCESSING DATE--13NOV70  
CIRC ACCESSION NO--AP0123924  
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ODESSA 3, BEZOSTAYA 1, AND  
MIRONOVSKAYA 808 WINTER WHEAT VARIETIES WERE SPRAYED WITH CHLOROCHOLINE  
CHLORIDE (I) AT 4, 8, OR 16 KG-HA. SPRAYING DURING FALL TILLERING  
RESULTED IN LARGER LEAVES IN THE FALL, BUT SMALLER ONES IN THE SPRING.  
I HAD GREATER INTERNODAL AND STEM SHORTENING EFFECTS WHEN SPRAYED EARLIER  
OR IN LARGER DOSES. SPRAYING OF I DURING SPRING TILLERING STRENGTHENED  
THE EFFECT ON THE LOWER INTERNODES. THIS INCREASED THE ODESSA 3 CROP,  
SINCE IT HAD THE ELASTIC RESISTANCE TO LODGING, AND TO A LESS EXTENT  
INCREASED THE MIRONOVSKAYA 808 CROP, WHICH HAD GREATER RESISTANCE. THE  
BEZOSTAYA 1 CROP WAS NOT AFFECTED, SINCE IT WAS VERY RESISTANT TO  
LODGING. I REDUCED THE SPIKE SIZE IN ALL VARIETIES, AND INCREASED THE  
LENGTH, BUT DECREASED THE D., OF THE WHEAT GRAINS. FACILITY:  
VSES. NAUCH.-ISSLED. INST. KUKURUZY, DNEPROPETROVSK, USSR.

UNCLASSIFIED

USSR

UDC 681.32:31

PRZHIYALKOVSKIY, V. V., SMIRNOV, G. D., and PYKHITIN, V. YA.  
~~SECRET~~  
"The Minsk-32 Electronic Computer"

Elektronnaya vychislitel'naya mashina "Minsk-32" (cf. English above), Moscow, "Statistika," 1972, 160 pp, ill., 56 k. (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 5, May 72, Abstract No 5B74K from annotation)

Translation: The book presents the principal technical parameters, operation algorithms, general structure, and capabilities of the Minsk-32 electronic computer. Its main features are described in detail. Questions of providing compatibility with the Minsk-2 and Minsk-22 computers are also considered. The book is intended for specialists working on computers of this series.

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USSR

UDC 681.326

PRZHIYALKOVSKIY, V. V., SMIRNOV, G. D., PYKHIN, V. YA., VASILEVSKIY, A. N.,  
ZAPOL'SKIY, A. P., MAL'TSEVA, V. A., IVANOV, G. A., REMOROVA, R. A., MEMENMAN,  
M. YE., and KUSHNEREV, N. T.

"Processor for Digital Data Processing System"

USSR Authors' Certificate No 305477 Cl. G06 f 15/16, filed 18 Apr 69,  
published 29 Jul 71 (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya  
Tekhnika, No 5, May 72, Abstract No 5B22OP)

Translation: The proposed device can be used in general-purpose computers operating in the binary and decimal number systems, under fixed- and floating-point conditions, and with representation of information in the form of machine levels and alphanumeric symbols, which have the capability of a wide build-up of peripherals. The processor contains arithmetic and logic units broken down into sections, a data store with word addressing and symbolic addressing, a control device to perform operations in accordance with a program routine, built-in multiplex and selector channels to communicate with the set of peripherals operating simultaneously with the arithmetic and logic unit, a symbol isolation unit, a number unit, and a storage address register.

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USSR

UDC 681.332.65

SMIRNOV, G. D., ~~RYKHTIN~~ PYKHTIN, V. Ya., and ZAPOL'SKIY, A. P.

"A Device for Exchange of Information"

USSR Author's Certificate No 288428, filed 24 Jun 67, published 28 Jan 71  
(from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 10, Oct  
71, Abstract No 10B243 P)

Translation: Devices are known for exchange of information between two subscribers which contain memory elements, decoders, and a commutator. These devices typically have a slow speed of exchange and a large memory capacity. As a distinguishing feature of this patent, the proposed device includes input and output counters and a comparison module; one input is connected to the output of the output counter, while the other input is connected to the output of the input counter and to the input of the input decoder. This increases the speed of exchange and cuts down the storage required.

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UDC: 681.326.3

USSR

NEMENMAN, M. Ye., RYKHTIN, V. Ya., MAL'TSEVA, V. A., SAMARSKIY, A. S., MALYAVSKIY, Ye. Ye., TORIKASHVILI, V. V.

"A Device for Debugging Programs"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obrazttsy, Tovarnyye Znaki, No 24, 1970, Soviet Patent No 277410, Class 42, Filed 21 April 1969, p 133

Abstract: This Author's Certificate introduces a device for debugging programs which contains a control unit, a switching module, a unit for data reception and output, a monitoring unit, and a decoder register. As a distinguishing feature of the patent, speed and reliability in program debugging are improved by incorporating into the device an interruption flip-flop; an automatic switching flip-flop; reset flip-flops; four rows of tubes; and AND, OR, and NOT logic circuits. The operation code input lines are connected to the inputs of the first row of tubes, the second inputs of these tubes being connected through the NOT circuit to the input of the OR circuit and to the inputs of the fourth row of tubes. The second inputs of the fourth row of tubes are connected to the first output of the control unit. The outputs of the first and fourth rows of tubes are connected to the inputs of the decoder register, whose

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USSR

NEMENMAN, M. Ye., et al, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 24, 1970, Soviet Patent No 277410, Class 42, Filed 21 April 1969, p 133

output is connected to one input of the control unit. The second output of the control unit is connected to the input of the device at the "one" of the first reset flip-flop. The "one" output of this flip-flop is connected to a tube input, and the second input of the tube is connected to the third output of the control unit. The output of the second tube is connected to the input of the device at the "zero" of the first reset flip-flop and to the input of the device at the "one" of the second reset flip-flop. The "zero" output of the first reset flip-flop is connected to the input of the third tube, the second input of this tube being connected to the fourth output of the control unit. The output of the third tube is connected to the first input of the monitoring unit, whose first output is connected to the input of the device at the "one" of the interruption flip-flop, input of the device at the "zero" of this flip-flop being connected to the fifth output of the control unit. The "one" output of the interruption flip-flop is connected to the second input of the monitoring unit. The second output of the monitoring unit is connected to the device at the "one" of the automatic switching flip-flop, the

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USSR

NEMENMAN, N. Ye., et al, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 24, 1970, Soviet Patent No 277410, Class 42, Filed 21 April 1969, p 133

input of the device at the "zero" of this flip-flop being connected to the first output of the switching module. The second output of the switching module is connected to the input of the device at the "zero" of the second reset flip-flop, the "one" output of this flip-flop being connected to the first input of the switching module and to the first input of the AND circuit. The second input of the AND circuit is connected to the "zero" output of the interruption flip-flop, while the output of the AND circuit is connected to the first input of the OR circuit. The second input of the OR circuit is connected to the "one" output of the automatic switching flip-flop and to the second input of the switching module, the third input of the switching module being connected to the sixth output of the control unit, while the third output of the switching module is connected to the second input of the control unit, and the fourth output of the control unit is connected to the data output unit.

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USSR

UDC 539.3

GUR'YEVA, N. I., PYKHTIN, YU. A.

"Evaluation of the Stress State in a Toroidal Shell of Variable Cross Section"

Sb. nauch. tr. Perm. politekhn. in-t (Collection of Scientific Works. Perm' Polytechnical Institute), 1971, No. 98, pp 22-29 (from RZh-Mekhanika, No 3, Mar 72, Abstract No 3V188)

Translation: In a strength calculation a shell of variable radius is replaced by two shells of constant radius, the greatest and least radii of the initial shell. The order of the stresses arising in a toroidal shell of variable radius is thus determined. The load is a uniform internal pressure. The results of the calculation are shown in the form of graphs. A calculation showed that the greatest stresses in the torus are the points located on the external surface close to the seal at the inner contour. Experimental results are also given. A. G. Teregulov.

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USSR

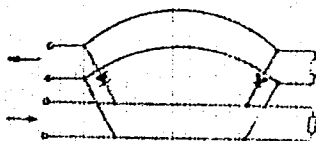
UDC 621.372.852.3

PYLAKIN, V. A.

"A Diode Attenuator for the Decimeter Wave Band"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztzy, Tovarnyye Znaki, No 4, Feb 72, Author's Certificate No 326672, Division H, filed 16 Mar 70, published 19 Jan 72, p 202

Translation: This Author's Certificate introduces a diode attenuator for the decimeter wave band which consists of a ring circuit and electrically controlled diodes. As a distinguishing feature of the patent, provision is made for input and output matching, reduced overall dimensions and simplified construction. The diodes are connected in a ring circuit, the lengths of the lines between the four legs of the circuit being equal to  $\frac{1}{4}\lambda$ ,  $(0.15-0.5)\lambda$ ,  $\frac{3}{4}\lambda$  and  $(0.1-0.05)\lambda$  in turn. Both diodes are connected in the last line, and the two adjacent legs of the ring circuit are loaded by ballast resistors.



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USSR

UDC 621.372.552.3(038.8)

PYLAKIN, V. A.

"A Variable Attenuator"

USSR Author's Certificate No 254632, Filed 19 Aug 68, Published 11 Mar 70 (from RZh-Radiotekhnika, No 10, Oct 70, Abstract No 10H186 F)

Translation: The proposed attenuator consists of a balance circuit with attenuation regulating element and ballast loads across the two free outputs. To obtain zero initial attenuation and to keep the frequency dependence of the attenuation low while maintaining satisfactory input and output matching, the balance circuit is made in the form of a ring with four outputs separated by distances of  $3\lambda/4$ ,  $\lambda/2$ ,  $\lambda/4$  and  $\lambda/2$ . The attenuation regulating element is made in the form of two simultaneously controllable identical conductances connected in parallel in the middle of each of the half-wave segments of the ring circuit. One illustration.

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Acc. Nr: AF0037239

Ref. Code: UR 0301

PRIMARY SOURCE: Voprosy Meditsinskoy Khimii, 1970, Vol 16,  
Nr 1, pp 51-58

ACTIVITIES OF HEXOKINASES AND DEHYDROGENASES OF PENTOSE-  
PHOSPHATE CYCLE IN TRANSPLANTED HEPATOMAS OF MICE

Il'in, V. S.; Teras, L. E.; Kil'dema, L. A.; Birk, R. V.;  
Pyldvere, E. I.

The Department of Biochemistry, Institute of Experimental Medicine USSR Academy  
of Medical Sciences, Leningrad. The Department of Biochemistry, Institute of Experimental  
and Clinical Medicine Estonian SSR Ministry of Health, Tallinn

Activities of hexokinase, glucokinase and fructokinase, and dehydrogenases of  
glucose-6-phosphate and 6-phosphogluconate in cytostructures of slowly-growing (hepa-  
toma 48 and 46) and rapidly-growing (hepatoma 22) transplanted hepatomas of C<sub>3</sub>H/HA  
mice were studied. Specific activity of hexokinase is significantly elevated in soluble  
as well as in mitochondrial fractions of all hepatomas studied. The specific activity  
of glucokinase in soluble fraction of slowly-growing hepatomas was more than in the

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REEL/FRAME  
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AP0037239

control. This may be connected with substantial decrease in protein content in this fraction of hepatomas. The specific activity of hepatomas glucokinase in mitochondria from hepatomas 48 and 46 was significantly lower than in the control, and does not developed in the tissue of rapidly-growing hepatomas. The specific activity of fructokinase in soluble fraction and mitochondria from slowly-growing hepatomas was slightly less than in the control. The activity of fructokinase in mitochondria of rapidly-growing hepatomas has not been noted. The specific activity of glucose-6-phosphate and 6-phosphogluconate dehydrogenases is sharply increased in soluble fraction of both slowly-growing and rapidly-growing hepatomas.

D.H.

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1/2 018 UNCLASSIFIED PROCESSING DATE--20NOV70  
TITLE--THE EFFECT OF BICMYCIN ON THE INDUCTION OF HEPATIC TUMORS IN MICE  
-U-  
AUTHOR--(G2)-PYLEVA, Z.A., VYSHESSLAVOVA, M.YA. P  
COUNTRY OF INFO--USSR  
SOURCE--BYULLETEN' EKSPERIMENTAL'NOY BIOLOGII I MEDITSINY, 1970, VOL 49,  
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SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
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PROCESSING DATE--20NOV7

CIRC ACCESSION NO--AP0131273

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. THE AUTHORS STUDIED THE EFFECT OF  
BIDMYCIN IN A DOSE OF 15 MG-KG ON THE CANCEROGENE SIS IN NICE LIVER  
INDUCED WITH ORTHUAMINOAZOTOCLOLE. THERE WAS SEEN A SIGNIFICANT  
STIMULATIA EFFECT OF THIS DOSE OF BIDMYCIN ON THE DEVELOPMENT OF HEPATI  
TUMORS IN ANTIBIOTIC INJECTION AT THE INITIAL STAGES OF CANCEROGENESIS.  
FACILITY: INSTITUTE OF NUTRITION OF THE ACADEMY OF MEDICAL  
SCIENCES OF THE USSR, MOSCOW.

UNCLASSIFIED



Acc. Nr: **AP0044154**

Ref. Code: UR 0244

PRIMARY SOURCE: Voprosy Pitaniya, 1970, Vol 29, Nr 1,  
pp 71-77

THE EFFECT OF AUREOMYCIN ON CARCINOGENESIS

Z. A. Puleva (Moscow)

Summary

The paper carries experimental data on the influence exerted by aureomycin on dermal cardiogenesis, induced with 20-methylcholanthrene. Two doses of aureomycin were used: 15 mg and 50 mg per kg of the animal's (mouse) body weight. The antibiotic was injected subcutaneously at different time periods before and after application of the cancerogen. Both preliminary to and concurrent with the cancerogen introduction of aureomycin in a dose of 15 mg/kg was noted to exercise a considerable stimulating action. Administration of the antibiotic at later stages of the process did not influence the carcinogenesis. When introduced in a dose of 50 mg/kg aureomycin had no noticeable effect on the carcinogenesis.

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Acc. Nr: **AP0052065**

Ref. Code: **DR0396**

PRIMARY SOURCE: Patologicheskaya Fiziologiya i  
Eksperimental'naya Terapiya, 1970, Vol 14,  
Nr 1, pp 54-59

THE EFFECT OF ACTINOMYCIN D ON VARIOUS STAGES OF CHEMICAL CARCINOGENESIS

Z. A. Pyleva

Antineoplastic antibiotic actinomycin D, given in a dose of 7.5 microgram/kg, accelerated the development of tumours of the skin when administered preliminarily or together with 20-methylcholantrene to mice. When actinomycin was administered at later stages of the process—it had no significant effect on carcinogenesis; some stimulating effect was produced on DNA synthesis in tissues preliminarily treated with 20-methylcholantrene.

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**19820603**

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UDC 669.15'27-194

STROGANOV, A. I., PYL'NEV, Yu. A., CHERNYSHEV, E. Ya., KEYS, N. V., PAKULEVA, V. S., DONETS, I. D., KHOLODOV, Yu. A., and GERMELIN, F. A., Chelyabinsk Polytechnical Institute; Chelyabinsk Metallurgical Plant

"Tungsten Losses in the Production of High-Speed Steel"

Moscow, Metallurg, No 1, Jan 71, pp 21-23

Abstract: Data are presented on seven melts of R18, R12, and R6M3 high-speed steels, an analysis is made of tungsten electric steelmaking and forge conversion processes, and methods are presented for utilizing scrap of tungsten-bearing steels. From the study the following conclusions can be made: as the tungsten content in the steel is increased, its assimilation decreases. A decrease in the proportion of tungsten through the ferro-alloys as well as a decrease in the consumption of oxygen for blowing facilitate a more complete assimilation of tungsten by the metal. A substantial portion of tungsten is lost with the scrap and reguli in the slag (0.34%), the emery dust, and scale during forging. A thorough extraction of tungsten from slag and scale is suggested. Means for reducing tungsten losses in the process of heating castings and ingots in the furnaces include

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STROGANOV, A. I., et al, Metallurg, No 1, Jan 71, pp 21-23

a nonoxidizing atmosphere, more rapid heating, and application of a protective coating to ingots prior to heating. To decrease decarburization and scale formation, the Chelyabinsk Metallurgical Plant has recently been using coatings comprising refractory clay (20%), M40 carborundum powder (6%), fine graphite (6%), commercial borax (3%), and liquid glass (65%).

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UDC 542.61:669.054.27:517.3

KIRGINTSEV, A. N., PYL'NEVA, N. A., Institute of Inorganic Chemistry, Novosibirsk, Siberian Department, Academy of Sciences USSR

"Zone Extraction Purification"

Novosibirsk, Izvestiya Sib Otdel Akad Nauk SSSR, Seriya Khim Nauk, No 2, Vol 1, pp 13-17

Abstract: A mathematical analysis was performed for the process of zone melting of a two-layered ingot. With the usual assumptions, plus the assumptions that the layers do not mix in the liquid state and have identical or similar melting points, an equation was derived which describes the distribution of impurities in each of the layers for any pass to the melted zone and a solution was found for the limiting distribution of impurities. Analysis of the equations revealed a relationship which is of practical significance for selection of the layer thickness for the production of even alloying of ingots when the distribution coefficients of the impurity in the layers are  $\lambda_1 < 1$ ,  $\lambda_2 > 1$  or vice versa. A relationship was worked out for estimation of the influence of layer thicknesses and distribution coefficients

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KIRGINTSEV, A. N., et al, Izvestiya Sib Otdel Akad Nauk SSSR,  
Seriya Khim Nauk, No 2, Vol 1, pp 13-17

on the degree of purification of the materials treated.

USSR

UDC 539.388.1

TSVILYUK, I. S., PYL'NIKOV, V. I., and MEN'SHIKH, V. A., Institute of Strength Problems, Ukrainian SSR Academy of Sciences (Kiev, Kaliningrad)

"Investigation of Some Characteristics of the Heat Resistance of Niobium Alloys 5VMTs, 5VMTsU, and 5VTTs at a Temperature of 1100°C"

Kiev, Problemy Prochnosti, No 11, Nov 73, pp 39-42

Abstract: The aim of the investigation is to establish the singularities of the resistivity of alloys 5VMTs, 5VMTsU, and 5VTTs to prolonged deformation and destruction, and on the basis of the mechanical characteristics to show, which of the indicated materials has higher heat-resistance characteristics.

Comparative results are presented of research on the long-term strength and creep characteristics of the above-named niobium alloys, obtained in a vacuum of  $10^{-5}$  torr at temperatures of 1100°C on the time basis of 3000 hours. Results of gas analysis of the tested specimens for oxygen content showed that essential saturation of the specimens with oxygen took place during the tests.

Comparative research on the heat resistance of the niobium alloys showed that alloys 5VMTs and 5VMTsU have greater heat-resistance characteristics

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TSVILYUK, I. S., et al., Problemy Prochnosti, No 11, Nov 73, pp 39-42

than does alloy 5VTTs, in spite of the fact that alloy 5VMTsU has a higher content of carbon and zirconium than does alloy 5VMTs.  
5 figures. 3 tables. 8 references.

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UDC 539.388.1

KRIVENYUK, V. V., TSVILYUK, I. S., PYL'NIKOV, V. I., Kiev, Kaliningrad.  
Institute of Strength Problems, Academy of Sciences, Ukrainian SSR,  
TSNIICHERMET (Central Scientific Research Institute of Ferrous Metallurgy  
Imeni I. P. Bardin)

"The High-Temperature Creep and Long-Time Strength of the Niobium Alloy  
5VMTs"

Kiev, Problemy Prochnosti, No. 6, 1971, pp 54-59

Abstract: In spite of the extensive use of niobium-based alloys, little information is contained in the literature concerning the characteristics of their creep and long-time strength. The results of the tests described in the present article, on alloy 5VMTs (W-5.08 percent, Mo-2.2 percent, Zr-0.7 percent, O-0.021 percent, C-0.01 percent, N-0.008 percent) in the temperature range from 1,060 to 1,800 degrees C on the basis of 0.1 to 1,000 hours, in conjunction with results from similar tests on alloy VN-2, make it possible to expand somewhat the framework of phenomenological analysis of the particularities of the creep and long-time strength characteristics of niobium-based alloys. 5 figures, 2 tables, 11 references.

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UDC: 543.424

PODOBEDOV, V. B., PYNDYK, A. M., and STERIN, Kh. Ye.

"Fast Recording of Combination Light Dispersion Spectra in Liquids and Gases"

Moscow, Priory i tekhnika eksperimenta, No 1, 1973, pp 190-193

Abstract: A multichannel device for obtaining combination dispersion spectra in the time of  $10^{-5}$  to  $3 \cdot 10^{-8}$  seconds is described in this paper. This rapidity of recording is made possible by the use of a pulsed excitation source of sufficient energy as well as an electron converter of limited amplification in the role of sensor. The converter permits simultaneous recording of separate spectral lines, thus providing simultaneous information over several channels. A block diagram of the device is given together with an explanation of its operation. Photographs of some of the spectra obtained are shown. The authors express their gratitude to V. P. Vinogradov for his assistance in building the equipment.

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USSR

UDC 539.216.2:621.318.1

PYN'KO, G. P., and PYN'KO, V. G., Institute of Physics, Siberian  
Department of the Academy of Sciences USSR

"Magnetic Anisotropy of Monocrystalline Nickel Films"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 31, No 6,  
Jun 71, pp 1318 -1320

Abstract: The growth of monocrystalline Ni films on the surface  
(001) of ion crystal bases of MgO takes place according to the  
schema (001)[100] nickel || (001)[100] base, the magnetic aniso-  
tropy in the plane of the film being biaxial. The constant of the  
biaxial anisotropy  $K_1$ , part of which in other publications is  
said to be anomalously too big, is investigated. Contrary to com-  
pact single crystals of Ni, in which the magnetocrystalline aniso-  
tropy constant  $K_1$  increases with augmentation of the magnetic  
field, the experimental investigation shows that in the case of  
Ni films, a further field augmentation after saturation effects a

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PYN'KO, G. P., et al, Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 31, No 6, Jun 71, pp 1318-1320

decrease of the absolute value of  $K_1$ . Investigations of the magnetostriction of films of alloys 50 % Co - 50 % Ni and 66 % Co - 34 % Ni revealed that the values of the magnetostriction constants  $|\lambda_{100}|$  and  $|\lambda_{110}|$  are not lower than for Ni and that they have the same symbol. This leads to the conclusion that the development of uniaxially stressed micro-fields in films on MgO-bases is combined with magnetostrictional deformations rising from the film formation. One illustr., one table, eight biblio. refs.

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